

REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-16 and 18-27 are currently pending. Claim 17 has been cancelled without prejudice; and Claims 1-3, 8, 9, 11, 15, 16, 18, 20, 22, 25, and 27 have been amended by the present amendment. The changes to the claims are supported by the originally filed specification and do not add new matter.

In the outstanding Office Action, Claims 1, 2, 5-15, and 22-27 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,154,190 to Yang et al. (hereinafter "the '190 patent"); Claims 16-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the '190 patent in view of U.S. Patent No. 5,933,203 to Wu et al. (hereinafter "the '203 patent"); and Claims 3 and 4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the '190 patent.

Applicants wish to thank the Examiner for the interview granted Applicants' representative on December 5, 2003, at which time Claim 1 was discussed and arguments in support of patentability were presented. In particular, dependent Claims 4 and 13 were discussed, as well as how the features of Applicants' invention distinguishes over the '190 patent. However, no agreement was reached pending the Examiner's further consideration of the claims upon formal submission of a response to the outstanding Office Action.

Amended Claim 1 is directed to a driving method for driving a liquid crystal display device with a cholesteric liquid crystal having a memory mode of operation, comprising:
(1) a first stage of applying a voltage so that an alignment of the cholesteric liquid crystal is substantially in parallel to a voltage application direction; (2) a second stage of applying a voltage to change a state of the cholesteric liquid crystal to a homogeneous state or a homogeneous/planar-mixed state; and (3) a third stage of applying a voltage to change the

state of the cholesteric liquid crystal from the homogeneous state or the homogeneous/planar-mixed state to a focalconic state. Further, Claim 1 has been amended to clarify that *a period of the second stage is determined based on τ_H , which is a time spent until the cholesteric liquid crystal, in a homeotropic state by application of a voltage, indicates the lowest dielectric constant after the application of the voltage is stopped*. The changes to Claim 1 are supported by the originally filed specification and do not add new matter.¹

Regarding the rejection of Claim 1, the '190 patent is directed to a flat-panel liquid crystal display and a corresponding drive circuit that individually controls the display state of multiple picture elements. In particular, Figure 3A of the '190 patent discloses a three-stage driving scheme that converts the liquid crystal from a homeotropic state to a focalconic state. However, Applicants respectfully submit that the '190 patent fails to disclose that *a period of the second stage is determined based on a value τ_H , which is a time spent until the liquid crystal, in a homeotropic state by application of a voltage, indicates the lowest dielectric constant after the application of the voltage is stopped*, as recited in amended Claim 1. Accordingly, Applicants respectfully submit that the rejection of Claim 1 (and dependent Claims 5-7 and 13) is rendered moot by the present amendment to Claim 1.

Further, Applicants note that the limitation added to Claim 1 was previously recited as part of dependent Claim 3. In addition, regarding the rejection of Claim 3, Applicants note that the Office Action asserts that the period of the second stage would have been a "obvious design choice." However, Applicants respectfully submit that the '190 patent is silent regarding whether the period of the second stage is based on a constant τ_H , as that constant is defined in Claim 1. Moreover, Applicants note that selecting the period of the second stage in the manner claimed would not have been obvious to one of ordinary skill in the art as it

¹ See, e.g., original Claim 3.

produces specific advantages discovered by the Applicants' extensive experimentation in this area.

Amended Claims 2, 8, 9, 15, 22, 25, and 27 recite limitations analogous to the limitations recited in amended Claim 1. Moreover, those claims have been amended in a manner analogous to the amendment to Claim 1. Accordingly, for the reasons stated above for the patentability of Claim 1, Applicants respectfully submit that the rejection of independent Claims 2, 8, 9, 15, 22, 25, and 27 (and all associated dependent claims) are rendered moot by the present amendment to those independent claims.

Amended Claim 16 is directed to a driving method for driving a liquid crystal display device with a cholesteric liquid crystal having a memory mode of operation, comprising:

- (1) initializing a display state by applying a predetermined voltage to each pixel; and
- (2) applying a voltage to each pixel based on conditions of voltage corresponding to display data, wherein when a temperature of the liquid crystal is lower than a predetermined temperature, a voltage application time is extended from a voltage application time corresponding to a predetermined temperature, and when the temperature of the cholesteric liquid crystal is higher than the predetermined temperature, a voltage application time is shortened from the voltage application time corresponding to the predetermined temperature.

Further, Claim 16 has been amended to incorporate the limitations recited in Claim 17. In particular, Claim 16 now recites that when a period for initializing is represented by T_1 and a period for applying a voltage to each pixel based on conditions of voltage corresponding to display data is represented by T_2 , lengths of T_1 and T_2 are extended from lengths of T_1 and T_2 determined with respect to the predetermined temperature, when the temperature of the cholesteric liquid crystal is lower than the predetermined temperature.

Applicants respectfully submit that the rejection of Claim 16 (and dependent Claims 18-21) is rendered moot by the present amendment to that claim. Moreover, the rejection of Claim 17 is rendered moot by the present cancellation of that claim.

Regarding the rejection of Claims 16-21 under 35 U.S.C. § 103(a), the Office Action asserts that the '190 patent discloses everything in the claims, with the exception of the "temperature compensation of said driving signals," and relies on the '203 patent to remedy that deficiency.

The '203 patent is directed to an apparatus and method of driving a liquid crystal flat-panel display. Further, the '203 patent discloses that "although less desirable for most applications, the driving apparatus can appropriately increase, or decrease, the duration of the driving signals to compensate for variations in display temperature."² However, Applicants respectfully submit that the '203 patent fails to disclose in particular that the period for initializing and the period for applying a voltage to each pixel are both extended when the temperature of the liquid crystal is lower than a predetermined temperature, as recited in amended Claim 16. Thus, no matter how the teachings of the '190 and '203 patents are combined, the combination does not teach or suggest the limitation added to Claim 16. Accordingly, Applicants respectfully submit that amended Claim 16 patentably defines over any proper combination of the '190 and '203 patents.

Further, Applicants respectfully submit that the '203 patent fails to disclose the specific formulas recited in dependent Claims 19-21.

Applicants respectfully submit that the rejection of dependent Claims 3 and 4 under 35 U.S.C. § 103 are rendered moot by the present amendment to Claim 1, from which Claims 3 and 4 depend.

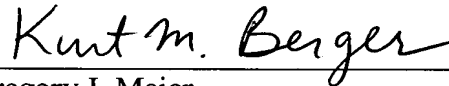
² Column 15, lines 42-45 of the '203 patent.

Thus, it is respectfully submitted that independent Claims 1, 2, 8, 9, 15, 16, 22, 25, and 27 (and all associated dependent claims) patentably define over any proper combination of the '190 and '203 patents.

Consequently, in view of the present amendment and in light of the above discussion, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Attorney of Record
Registration No. 25,599
Kurt M. Berger, Ph.D.
Registration No. 51,461

Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/03)

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